Claims

What is claimed is:

1. A non-invasive method for facilitating the diagnosis of a subject for a tissue remodelling-associated condition, comprising:

obtaining a biological sample from a subject;

detecting a high molecular weight enzyme complex in the biological sample; and

correlating the presence or absence of the high molecular weight enzyme complex with the presence or absence of a tissue remodelling-associated condition, thereby facilitating the diagnosis of the subject for a tissue remodelling-associated condition.

2. The method of claim 1, wherein the tissue remodelling-associated condition is cancer.

3. The method of claim 1, wherein the tissue remodelling-associated condition is an arthritic condition, an obstructive condition, or a degenerative condition.

4. The method of claim 2, wherein the cancer is organ-confined prostate cancer.

5. The method of claim 2, wherein the cancer is metastatic prostate cancer.

6. The method of claim 2, wherein the cancer is in cells of epithelial origin.

7. The method of claim 6, wherein the cancer is selected from the group consisting of cancers of the nervous system, breast, retina, lung, skin, kidney, liver, pancreas, genito-urinary tract, and gastrointestinal tract.

8. The method of claim 2, wherein the cancer appears in cells of mesodermal origin.

9. The method of claim 2, wherein the cancer appears in cells of endodermal origin.

10. The method of claim 2, wherein the cancer affects cells of bone or of hematopoietic origin.

11. The method of claim 1, wherein the high molecular weight enzyme complex comprises a protease.

12. The method of claim 11, wherein the protease is a serine protease.

13. The method of claim 11, wherein the protease is a matrix metalloproteinase.

14. The method of claim 13, wherein the matrix metalloproteinase is an MMP-9.

15. The method of claim 1, wherein the high molecular weight enzyme complex comprises a lipocalin.

16. The method of claim 15, wherein the lipocalin is NGAL.

17. The method of claim 15, wherein the enzyme complex comprises a TIMP.

18. The method of claim 17, wherein the TIMP is TIMP-1.

19. The method of claim 1, wherein the high molecular weight enzyme complex comprises an enzyme complexed with itself to form a multimer.

20. The method of claim 19, wherein the multimer is a dimer or a trimer.

21. The method of claim 19, wherein the multimer is further complexed with a lipocalin.

22. The method of claim 21, wherein the lipocalin is NGAL.

23. The method of claim 21, wherein the multimer is further complexed with a TIMP.

24. The method of claim 23, wherein the TIMP is TIMP-1.

25. The method of claim 1, wherein the molecular weight of the enzyme complex is approximately 150 kDa.

26. The method of claim 1, wherein the molecular weight of the enzyme complex is approximately 115 to approximately 125 kDa.

27. A non-invasive method for facilitating the diagnosis of a subject for a tissue remodelling-associated condition, comprising:

obtaining a biological sample from a subject;

detecting lipocalin in the biological sample; and

correlating the presence or absence of the lipocalin with the presence or absence of a tissue remodelling-associated condition, thereby facilitating the diagnosis of the subject for a tissue remodelling-associated condition.

28. The method of claim 27, wherein the tissue remodelling-associated condition is cancer.

29. The method of claim 27, wherein the tissue remodelling-associated condition is an arthritic condition, an obstructive condition, or a degenerative condition.

30. The method of claim 28, wherein the cancer is organ-confined prostate cancer.

31. The method of claim 28, wherein the cancer is metastatic prostate cancer.

32. The method of claim 28, wherein the cancer is in cells of epithelial origin.

33. The method of claim 32, wherein the cancer is selected from the group consisting of cancers of the nervous system, breast, retina, lung, skin, kidney, liver, pancreas, genito-urinary tract, and gastrointestinal tract.

34. The method of claim 28, wherein the cancer appears in cells of mesodermal origin.

35. The method of claim 28, wherein the cancer appears in cells of endodermal origin.

36. The method of claim 28, wherein the cancer affects cells of bone or of hematopoietic origin.

37. The method of claim 27, wherein the lipocalin is NGAL.

38. The method of claim 27, wherein the lipocalin exists as a multimer.

39. The method of claim 38, wherein the multimer is a dimer or a trimer.

40. The method of any one of claims 1 or 27, wherein the biological sample is urine.

41. The method of claim 40, further comprising removal of low molecular weight contaminants from the urine prior to the detection step.

42. The method of claim 41, wherein the urine is dialyzed.

43. The method of claims 1 or 27, wherein the enzyme is detected by an electrophoretic pattern.

44. The method of claim 43, wherein the electrophoretic pattern is a zymogram comprising a substrate.

45. The method of claim 44, wherein the zymogram substrate is selected from the group consisting of gelatin, casein, fibronectin, vitronectin, plasmin, plasminogen, type IV collagen, and a derivative of type IV collagen.

46. The method of any one of claims 1 or 27, wherein the enzyme is detected immunochemically.

47. The method of claim 46, wherein the enzyme is detected by a radio-immunoassay.

48. The method of claim 46, wherein the enzyme is detected by an enzyme-linked immunosorbant assay.

49. A kit for facilitating the diagnosis and prognosis of a tissue remodelling-associated condition, comprising:

a container having a reagent for detecting a high molecular weight enzyme complex in a biological sample; and

instructions for using said reagent for detecting the high molecular weight enzyme complex for facilitating the diagnosis and prognosis of a tissue remodelling-associated condition.

50. The kit of claim 49, wherein the tissue remodelling-associated condition is cancer.

51. The kit of claim 49, wherein the tissue remodelling-associated condition is an arthritic condition, an obstructive condition, or a degenerative condition.

52. The kit of claim 50, wherein the cancer is organ-confined prostate cancer.

53. The kit of claim 50, wherein the cancer is metastatic prostate cancer.

54. The kit of claim 50, wherein the cancer is in cells of epithelial origin.

55. The kit of claim 54, wherein the cancer is selected from the group consisting of cancers of the nervous system, breast, retina, lung, skin, kidney, liver, pancreas, genito-urinary tract, and gastrointestinal tract.

56. The kit of claim 50, wherein the cancer appears in cells of mesodermal origin.

57. The kit of claim 50, wherein the cancer appears in cells of endodermal origin.

58. The kit of claim 50, wherein the cancer affects cells of bone or of hematopoietic origin.

59. The kit of claim 49, wherein the high molecular weight enzyme complex comprises a protease.

60. The kit of claim 59, wherein the protease is a serine protease.

61. The kit of claim 59, wherein the protease is a matrix metalloproteinase.

62. The kit of claim 61, wherein the matrix metalloproteinase is an MMP-9.

63. The kit of claim 49, wherein the high molecular weight enzyme complex comprises a lipocalin.

64. The kit of claim 63, wherein the lipocalin is NGAL.

65. The kit of claim 63, wherein the enzyme complex comprises a TIMP.

66. The kit of claim 65, wherein the TIMP is TIMP-1.

67. The kit of claim 49, wherein the high molecular weight enzyme complex comprises an enzyme complexed with itself to form a multimer.

68. The kit of claim 67, wherein the multimer is a dimer or a trimer.

69. The kit of claim 67, wherein the multimer is further complexed with a lipocalin.

70. The kit of claim 69, wherein the lipocalin is NGAL.

71. The kit of claim 69, wherein the multimer is further complexed with a TIMP.

72. The kit of claim 71, wherein the TIMP is TIMP-1.

73. The kit of claim 49, wherein the molecular weight of the enzyme complex is approximately 150 kDa.

74. The kit of claim 49, wherein the molecular weight of the enzyme complex is approximately 115 to approximately 125 kDa.

75. The kit of claim 49, wherein the biological sample is urine.

76. The kit of claim 75, further comprising an apparatus for separating urine into components for removal of low molecular weight contaminants.

77. The method or kit of any one of claims 1, 27, or 49, wherein the high molecular weight enzyme complex does not have a molecular weight of 115 kDa.

78. The method or kit of any one of claims 1, 27, or 49, wherein the high molecular weight enzyme complex does not comprise a progelatinase B enzyme.

79. The method or kit of any one of claims 1, 27, or 49, wherein the high molecular weight enzyme complex does not comprise NGAL.

80. The method or kit of any one of claims 1, 27, or 49, wherein the high molecular weight enzyme complex does not comprise a progelatinase B enzyme associated with NGAL.